? IMPORTANT INFORMATION ? KEEP FOR OPERATOR ? IMPORTANT INFORMATION ?

OPERATOR MANUAL

OM-TD

Part Number 121006

DOMESTIC

MODELS: TDC/3, TDC/2, TDO/1, TDO,
TDA, TDA/1, TD/2
Steam Jacketed Kettles

Stainless Steel
Direct steam heated
Table top mounted
Tilting

Model TDC/3

Model TDO

Model TD/2

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

WARNING
DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VICINITY OF THIS OR ANY OTHER APPLIANCE.

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GROEN®

Information contained in this document is known to be current and accurate at the time of printing/creation. Unified Brands recommends referencing our product line websites, unifiedbrands.net, for the most updated product information and specifications.

MADE IN USA™

IMPORTANT — READ FIRST — IMPORTANT

CAUTION: BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

WARNING: THIS UNIT IS INTENDED FOR USE IN THE COMMERCIAL HEATING, COOKING AND HOLDING OF WATER AND FOOD PRODUCTS, PER THE INSTRUCTIONS CONTAINED IN THIS MANUAL. ANY OTHER USE COULD RESULT IN SERIOUS PERSONAL INJURY OR DAMAGE TO THE EQUIPMENT AND WILL VOID WARRANTY.

WARNING: KETTLES MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH PLUMBING. IMPROPER INSTALLATION CAN RESULT IN INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

WARNING: AVOID ANY EXPOSURE TO ESCAPING STEAM. STEAM CAN CAUSE SEVERE BURNS.

WARNING: TAKE EXTREME CARE TO KEEP HOT CONTENTS FROM SPILLING OR SPLASHING ON ANYONE. DO NOT STAND DIRECTLY IN FRONT OF KETTLE BODIES WHEN THEY ARE BEING TILTED.

WARNING: AVOID ALL DIRECT CONTACT WITH HOT EQUIPMENT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

WARNING: AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN KETTLES. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

CAUTION: DO NOT OVER FILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.

WARNING: TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

WARNING: WHEN TILTING KETTLE FOR PRODUCT TRANSFER:

1) WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.
2) USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.
3) PLACE CONTAINER ON STABLE, FLAT SURFACE, AS CLOSE TO KETTLE AS POSSIBLE.
4) STAND TO LEFT OR RIGHT SIDE OF KETTLE (DEPENDING ON TILTING HANDLE PLACEMENT) WHILE POURING . DO NOT STAND DIRECTLY IN POUR PATH OF HOT CONTENTS.
5) POUR SLOWLY, MAINTAIN CONTROL OF KETTLE BODY HANDLE AT ALL TIMES, AND RETURN KETTLE BODY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.
6) DO NOT OVER FILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.

CAUTION: KEEP FLOORS IN FRONT OF KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN IMMEDIATELY, TO AVOID SLIPS OR FALLS.

WARNING: FAILURE TO CHECK SAFETY VALVE OPERATION PERIODICALLY COULD RESULT IN PERSONAL INJURY AND/OR DAMAGE TO EQUIPMENT.

IMPORTANT — READ FIRST — IMPORTANT

WARNING: **WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.**

WARNING: **TO AVOID INJURY, READ AND FOLLOW ALL PRECAUTIONS STATED ON THE LABEL OF THE WATER TREATMENT COMPOUND.**

CAUTION: **MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD AND PROTECTIVE CLOTHING. CAREFULLY READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER TO BE USED.**

CAUTION: **USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE OPERATOR INJURY AND DAMAGE TO THE EQUIPMENT, AND WILL VOID ALL WARRANTIES.**

IMPORTANT: **SERVICE PERFORMED BY OTHER THAN FACTORY AUTHORIZED PERSONNEL WILL VOID WARRANTIES.**

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References

KLENZADE SALES CENTER
ECOLAB. Inc.
370 Wabasha
St. Paul, Minnesota 55102
800/352-5326 or 612/293-2233

NATIONAL SANITATION FOUNDATION
3475 Plymouth Rd.
Ann Arbor, Michigan 48106

ZEP MANUFACTURING CO.
1310-T Seaboard Industrial Blvd.
Atlanta, Georgia 30318

Equipment Description

A. All Models

The Groen TDC/3, TDC/2, TDO/1, TDO, TDA/1 and TD/2 are tilting, table-top kettles with direct steam-heated jackets. The one-piece stainless steel body on each includes a butterfly shaped pouring lip. The kettles have a 180 emery grit interior finish and a bright semi-deluxe exterior finish.

Every unit requires a remote steam source. The steam supply is controlled by an inlet valve, and enters the jacket through one support and rotary joint. Condensate leaves the jacket through the other rotary joint and support. Standard units are ASME shop inspected, stamped, and registered with the National Board. These kettles operate efficiently at pressures above five PSI. A safety valve, strainer, steam trap, and check valve are all required for installation, and may be ordered from Groen as optional equipment.

B. Model TDC/3

The TDC/3 kettle has a 2/3 jacket rated for working pressures up to 55 PSI. The kettle body incorporates a triple reinforced rim. Two tubular steel supports support the swivel on which the kettle tilts. A leg projects from the bottom of the kettle.

The design of the TDC/3 makes it easy for one person to tilt the kettle with the tilting handle, even when the kettle is full.

C. Model TDC/2

The TDC/2 resembles the TDC/3, except that the kettle rests on a chrome plated base with arms, and has a maximum operating pressure of 45 PSI.

D. Models TDO and TDO/1

The TDO and TDO/1 Oyster Cookers have a special purpose kettle body and supports similar to those of the TDC/2 and TDC/3, with a tilting handle.

Model TDC/3

Model TDC/2

Model TDO

Model TDO/1

E. Model TDA/1

The TDA/1 kettle incorporates a triple reinforced rim and a 2/3 jacket registered for working pressures up to 50 PSI. Two chrome-plated arms support the trunnions on which the kettle tilts. The arm that also serves as the steam inlet has an integral steam control valve.

TDA/1

F. Model TD/2

The TD/2 kettle has a 2/3 jacket rated to operate at pressures up to 50 PSI. Two stainless steel legs support the trunnion. A crank-operated gear mechanism is used to tilt the kettle and to hold it in position.

TD/2

KETTLE CHARACTERISTICS

Model	Capacity	Dimensions, inches (mm)		
	Quarts (liters)	Front to back	Left to right	Rim height
TDC/3-10	10 (9.4)	13-1/4 (337)	12-7/8 (327)	16-1/8 (410)
TDC/3-20	20 (18.9)	15-1/4 (387)	14-7/8 (378)	17-1/8 (435)
TDC/2-10	10 (9.4)	12-3/8 (314)	12-7/8 (327)	16-1/8 (410)
TDC/2-20	20 (18.9)	14-3/8 (365)	14-7/8 (378)	17-1/8 (435)
TDO	1 (0.94)	9-1/4 (235)	9-1/2 (241)	11-5/8 (295)
TDO/1-32	1 (0.94)	10 (254)	13-1/2 (343)	11-5/8 (295)
TDO/1-64	2 (1.9)	10-11/16 (271)	13-1/2 (343)	12-3/8 (314)
TDO/1-72	2-1/4 (2.2)	10-13/16 (275)	13-1/2 (343)	12-7/8 (327)
TDA-10	10 (9.4)	12 (305)	19-7/8 (505)	19-1/4 (489)
TDA-20	20 (18.9)	14-1/2 (368)	21-7/8 (556)	20-3/8 (518)
TDA/1-40	40 (37.8)	19-3/4 (502)	26-3/4 (679)	22-3/8 (568)
TD/2-40	40 (37.8)	20-1/2 (521)	28-1/4 (717)	21-7/8 (556)

Optional Features and Equipment

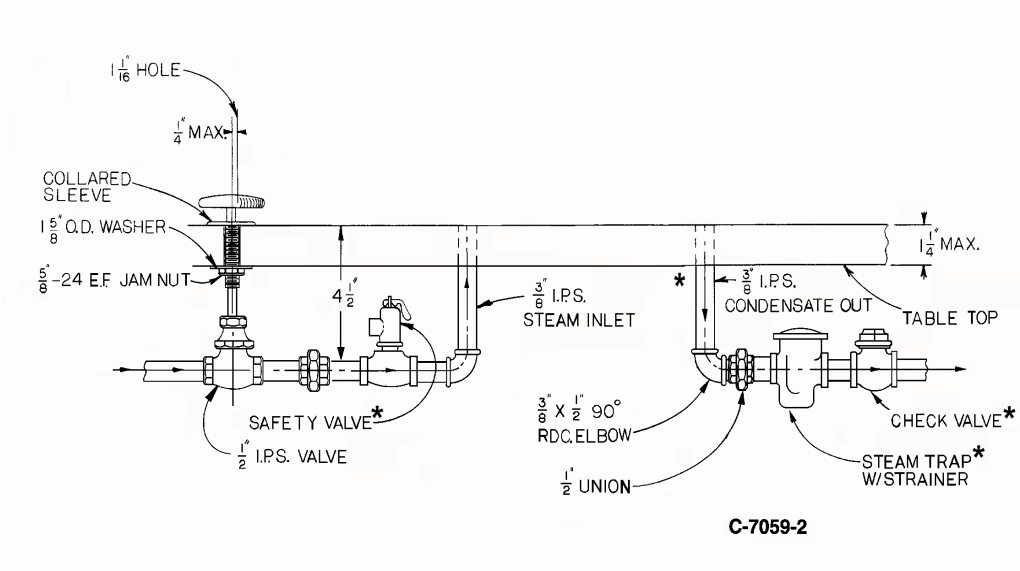
	TDC/3	TDC/2	TDO, TDO/1	TDA, TDA/1	TD/2
Higher Maximum Pressure	✔	✔		✔	✔
Lift-off cover	✔	✔		✔	✔
T5C table mounting	✔	✔	✔	✔	✔
Basket inserts	✔	✔		✔	✔
Kettle brush kit	✔	✔		✔	✔
Steam trap assembly	✔	✔	✔	✔	✔
Motor-driven agitator	✔	✔		✔	✔

Installation

WARNING
THIS UNIT MUST BE INSTALLED BY PERSONNEL QUALIFIED TO WORK WITH PLUMBING. IMPROPER INSTALLATION CAN CAUSE INJURY TO PERSONNEL AND/OR DAMAGE TO EQUIPMENT.

1. Installation under a ventilation hood is recommended. Consult local codes.
2. Install and anchor the kettle on a level rigid surface.
3. If the steam supply pressure is greater than the maximum working pressure stamped on the nameplate, you must install a pressure reducing valve in the steam supply line near the kettle.
4. Connect the steam supply line to the steam inlet fitting. Include a steam control valve and an appropriate safety valve. To obtain the full heating capability of the kettle, the steam supply line must be as large as the steam inlet fitting.
5. The safety valve is preset to relieve jacket pressure that exceeds its rated limit. Do not try to adjust the valve setting, and do not allow the valve outlet or lever to be blocked.
6. Connect the kettle condensate return line to the boiler return line, or to a drain. A suitable steam trap, strainer, and check valve must be installed. (See piping diagram, below).
7. Any mechanical change must be approved by the Groen Food Service Engineering Department.

STANDARD PIPING FOR TDC/3, TDC/2, TDO/1, TDO and TD/2



The inlet valve may be located anywhere on the cabinet top or face but not through the face casting. The illustrated sleeve is designed to simplify valve installation by allowing the valve to shift off center by 1/4", if necessary. This should be enough to allow for thread take-up and misalignment.

*Accessories available from Groen as options. Piping is to be supplied by the installer.

Initial Start-Up

IMPORTANT
BE SURE ALL OPERATORS READ, UNDERSTAND AND FOLLOW THE OPERATING INSTRUCTIONS, CAUTIONS, AND SAFETY INSTRUCTIONS CONTAINED IN THIS MANUAL.

Now that the kettle has been installed, you should test it to ensure that it is operating correctly.

1. Remove all literature and packing materials from inside and outside of the unit.
2. Pour a small amount of water into the kettle.
3. Open the steam inlet valve.
4. When the water begins to boil, inspect all of the fittings to ensure that there are no leaks.
5. Check the safety valve by lifting its lever far enough to let steam escape. Then let it snap back into place to reseat the valve so that it will not leak.
6. Shut down the unit by closing the steam inlet valve.

WARNING
AVOID ANY EXPOSURE TO ESCAPING STEAM, WHICH CAN CAUSE SEVERE BURNS.

7. Operate the tilting mechanism to confirm that this feature functions through the whole range of normal operation.

If the unit functions as described above, it is ready for use. If the unit does not function as intended, contact your local Groen Certified Service Agency.

Operation

To heat the kettle, open the steam inlet valve. Adjusting the valve allows you to control the heating rate. Opening the valve more allows steam to flow into the jacket faster, and heats the product faster.

The kettle operates efficiently at pressures from five PSI to the maximum working pressure for which the kettle was designed. The maximum pressure is stamped on the kettle nameplate.

WARNING
AVOID EXPOSURE TO ESCAPING STEAM, WHICH CAN CAUSE SEVERE BURNS.

Tilting

To transfer product or empty the kettle: the kettle is designed and manufactured to be tilted in a controlled manner. Grasp the insulated plastic ball firmly. Maintain a firm grip on handle when tilting, while keeping the kettle body in a tilted position and then SLOWLY returning the kettle body to an upright position.

A. TDC/3, TDC/2, TDO. TDO/1 and TDA/1:
Pull the handle forward to tilt the kettle, backward to return the kettle to upright position.

B. TDA
The tilting handle on this older model is spring-loaded to latch the kettle in position. To tilt the kettle, pull up on the tilting handle to release the latch,

then move the handle forward or backward as needed.

C. TD/2
Tilt the kettle by turning the handwheel. The kettle will hold its position when you stop turning the wheel. If the tilting mechanism seems to lock, do not use excessive force to free the kettle. Call for assistance from your authorized Groen service agency.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

TAKE SPECIAL CARE TO AVOID CONTACT WITH HOT KETTLE BODY OR HOT PRODUCT, WHEN ADDING INGREDIENTS, STIRRING OR TRANSFERRING PRODUCT TO ANOTHER CONTAINER.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS AT LEAST 2-3" (5-8 cm) BELOW THE KETTLE BODY RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING PRODUCT AND SAFE TRANSFER.

WARNING
WHEN TILTING KETTLE FOR PRODUCT TRANSFER:

1) **WEAR PROTECTIVE OVEN MITT AND PROTECTIVE APRON.**
2) **USE CONTAINER DEEP ENOUGH TO CONTAIN AND MINIMIZE PRODUCT SPLASHING.**
3) **PLACE CONTAINER ON STABLE, FLAT SURFACE, AS CLOSE TO KETTLE AS POSSIBLE.**
4) **STAND TO LEFT OR RIGHT SIDE OF KETTLE (DEPENDING ON TILTING HANDLE PLACEMENT) WHILE POURING — NOT DIRECTLY IN POUR PATH OF HOT CONTENTS.**
5) **POUR SLOWLY, MAINTAIN CONTROL OF KETTLE BODY HANDLE AT ALL TIMES, AND RETURN KETTLE BODY TO UPRIGHT POSITION AFTER CONTAINER IS FILLED OR TRANSFER IS COMPLETE.**
6) **DO NOT OVERFILL CONTAINER. AVOID DIRECT SKIN CONTACT WITH HOT CONTAINER AND ITS CONTENTS.**

CAUTION
KEEP FLOORS IN FRONT OF THE KETTLE WORK AREA CLEAN AND DRY. IF SPILLS OCCUR, CLEAN AT ONCE TO AVOID SLIPS OR FALLS.

Accessories

1. **Cover**
As with stock pot cooking, an optional lift-off cover can speed up the heating of water and food products. A cover helps retain heat in the cooking vessel and reduces the amount of heat and humidity released into the kitchen. Use of a cover can reduce some product cook times and help maintain the temperature, color and texture of products being held or simmered for extended periods.

Make sure plastic ball handle is secure on the lift off cover before using. ALWAYS use the plastic handle to place or remove the cover from the kettle. Wear protective oven mitts and a protective apron.

When putting the cover on the kettle, position it on top of kettle rim, with its flat edge facing the pouring lip.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

When removing cover:

a) Firmly grasp the plastic handle

b) Lift rear edge (farthest from operator) 1-2" (3-5 cm) to allow any steam and water vapor to escape the cooking vessel. Wait 2-3 seconds.

c) Tilt cover to 45-60° angle and allow any hot condensate or product to roll off cover back into kettle.

d) Remove the cover, ensuring that any remaining hot condensate or product does not drip on operator, floor or work surfaces.

e) Place cover on safe, flat, sanitary, out-of-the-way surface, or return to kettle rim.

CAUTION
DO NOT TILT KETTLE BODY WITH COVER IN PLACE. COVER MAY SLIDE OFF, CAUSING INJURY TO OPERATOR.

2. **Basket Insert**
An optional kettle basket insert (10 Quart and larger) can assist in cooking water boiled products, including eggs, potatoes, vegetables, shell fish, pasta and rice. The nylon mesh liner must be used when cooking product smaller than the mesh size of the basket, which is approximately 1/4" (6 mm). This includes rice and small pasta shapes.

Allow for the water displacement of basket and product to be cooked. This may mean only filling the kettle half full of water. Test the basket and product displacement with the kettle OFF, and with cold water in the kettle.

Avoid contact with steam and hot condensate when removing a cover.

CAUTION
DO NOT OVERFILL THE KETTLE WHEN COOKING, HOLDING OR CLEANING. KEEP LIQUIDS A MINIMUM OF 2-3" (5-8 cm) BELOW THE KETTLE RIM TO ALLOW CLEARANCE FOR STIRRING, BOILING AND SAFE PRODUCT TRANSFER.

c) Load basket on a level, stable work surface.

c) Lift the loaded basket with both hands. Get help from another person if the basket is too heavy for safe handling.

d) Slowly lower product into kettle.

WARNING
AVOID ALL DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

AVOID ALL DIRECT CONTACT WITH HOT FOOD OR WATER IN THE KETTLE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

d) When removing basket with cooked product, lift the basket straight up, ensuring that the bottom of the basket clears the rim and pouring lip of the kettle. Wear protective oven mitts and a protective apron.

e) Allow hot water to fully drain from product before moving the basket away from the kettle. Do not rest the kettle basket on the kettle rim or pouring lip. If the basket is too heavy for one individual to lift and safely move, get help from another person. Remove product immediately from the basket into another container, being sure to avoid contact with hot product and hot basket or. . .

f) Place basket with food on stable, flat surface, setting it inside a solid steamer or bake pan, to catch any remaining hot water which might drain from product.

Cleaning

1. Suggested Tools:
   a. Cleaner, such as Klenzade HC-10 or HC-32 from ECOLAB, Inc.
   b. Kettle brushes in good condition.
   c. Sanitizer such as Klenzade XY-12.
   d. Film remover such as Klenzade LC-30.

CAUTION
MOST CLEANERS ARE HARMFUL TO THE SKIN, EYES, MUCOUS MEMBRANES, AND CLOTHING. PRECAUTIONS SHOULD BE TAKEN. WEAR RUBBER GLOVES, GOGGLES OR FACE SHIELD, AND PROTECTIVE CLOTHING. READ THE WARNINGS AND FOLLOW THE DIRECTIONS ON THE LABEL OF THE CLEANER CAREFULLY.

2. Procedure
   a. Clean food-contact surfaces as soon as possible after use. If the unit is in continuous use, thoroughly clean and sanitize the interior and exterior at least once every 12 hours.

WARNING
AVOID ANY DIRECT CONTACT WITH HOT SURFACES. DIRECT SKIN CONTACT COULD RESULT IN SEVERE BURNS.

   b. Scrape and flush out food residues. Be careful not to scratch the kettle with metal implements.
   c. Prepare a hot solution of the detergent/ cleaning compound as instructed by the supplier.

Use brushes, sponges or cloth to clean your kettles

Don't scrape with tools, steel wool or other abrasives.

   d. Clean the unit thoroughly, inside and outside.
   e. Rinse the kettle thoroughly with hot water, then drain completely.

f. As part of the daily cleaning program, clean soiled external and internal surfaces.

g. To remove stuck materials, use a brush, sponge, cloth, plastic or rubber scraper, or plastic wool with the cleaning solution. To reduce effort required in washing, let the detergent solution sit in the kettle and soak into the residue. Do not use abrasive materials or metal tools that might scratch the surface. Scratches make the surface harder to clean and provide places for bacteria to grow.

h. Do not use steel wool, which may leave particles in the surface and cause eventual corrosion and pitting.

i. The outside of the unit may be polished with a stainless steel cleaner such as “Zepper” from Zep Manufacturing Co.

j. When equipment needs to be sanitized, use a solution equivalent to one that supplies 200 parts per million available chlorine. Obtain advice on sanitizing agents from your supplier of sanitizing products.

k. Following the supplier’s instructions, apply the agent after the unit has been cleaned and drained. Drain and thoroughly rinse off the sanitizer.

CAUTION
NEVER LEAVE A CHLORINE SANITIZER IN CONTACT WITH STAINLESS STEEL SURFACES LONGER THAN 30 MINUTES. LONGER CONTACT CAN CAUSE STAINING AND CORROSION.

l. It is recommended that each piece of equipment be sanitized just before use.

m. If there is difficulty removing mineral deposits or a film left by hard water or food residues, clean the kettle thoroughly and use a deliming agent, such as Groen Delimer/Descaler (Part Number 114800) or Lime-Away® from Ecolab, in accordance with the manufacturer’s directions. Rinse and drain the unit thoroughly before further use.

n. If cleaning problems persist, contact your cleaning product representative for assistance. The supplier has a trained technical staff with laboratory facilities to serve you.

Maintenance

NOTICE: Contact Groen or an authorized Groen representative when repairs are required.

Periodic Maintenance

A Maintenance and Service Log is provided at the back of this manual. Each time maintenance is performed on your Groen kettle, enter the date on which the work was done, what was done, and who did it. File the log with the warranty.

Periodic inspection will minimize equipment down time and increase the efficiency of operation. The following points should be checked:.

1. Once a day, with pressure in the jacket, check the operation of the safety valve. Lift the lever of the safety valve until steam is released.

WARNING
WHEN TESTING, AVOID ANY EXPOSURE TO THE STEAM BLOWING OUT OF THE SAFETY VALVE. DIRECT CONTACT COULD RESULT IN SEVERE BURNS.

Then release the lever and let the valve snap shut. If the lever does not activate, or there is no evidence of discharge, or the valve leaks, immediately discontinue use of the kettle and contact a qualified Groen service representative.

2. At least once every 90 days, inspect fittings and valves for signs of damage or wear. Regularly examine trunnion packings and valve seats for wear, and replace them when necessary.

CAUTION
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR AN AUTHORIZED SUPPLIER WILL VOID ALL WARRANTIES AND COULD INJURE THE OPERATOR OR DAMAGE THE EQUIPMENT.

NOTE: Service performed by other than factory-authorized personnel will void all warranties.

3. Lubricate trunnions and gears with a good grade of high temperature grease. Grease trunnions at least once every 60 days, and grease gears when inspection shows that they are dry.

4. For TD/2 kettles, grease the tilting actuator every 90 days. While the kettle is fully tilted, add Calcium Complex No. 2 Grease at the grease fittings.

NOTE: Use only Calcium Complex Nr. 2 Grease, which is available from Groen (Part No. 93703).

Sequence of Operation

The following “action-reaction” outline is provided to help the user understand the function of the equipment.

When the steam inlet valve is opened, steam flows into the jacket at a pressure determined by the boiler system or by the pressure reducing valve that serves the kettle.

In the jacket, steam transfers heat to the kettle as it condenses into water. The steam trap allows condensate (water) to leave the jacket, while it holds steam in. When the steam is shut off, condensation produces a vacuum in the jacket, but the check valve in the condensate return line keeps water from flowing back into the jacket.

Troubleshooting

Your Groen kettle will operate smoothly and efficiently if properly maintained. However, the following is a list of checks to make in the event of a problem. If the actions suggested do not solve the problem, call your qualified Groen Service Representative. For the phone number of the nearest agency, call your area Groen representative or the Groen Parts and Service Department. If an item on the list is followed by X, the work should be done by a qualified service representative.

WARNING

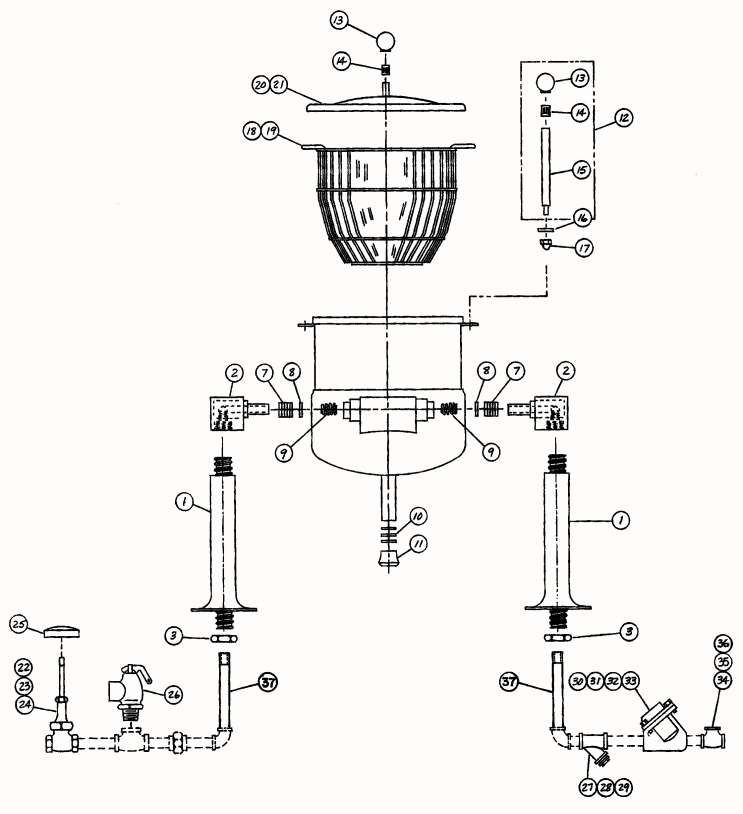
USE OF ANY REPLACEMENT PARTS OTHER THAN THOSE SUPPLIED BY GROEN OR THEIR AUTHORIZED DISTRIBUTORS CAN CAUSE INJURY TO THE OPERATOR AND DAMAGE TO THE EQUIPMENT AND WILL VOID ALL WARRANTIES.

SYMPTOM	WHO	WHAT TO CHECK X indicates items which must be performed by an authorized technician.
Kettle will not heat.	User	a. That the steam inlet valve is open. b. That the steam supply line is turned on. c. That the condensate return valve is open. d. That the boiler is operating properly. Steam should be supplied at a pressure greater than five PSI.
	Auth Service Rep Only	e. Steam supply line for blockage. X f. Condensate return line for blockage. X g. Steam trap operation. X
Safety valve leaks a small amount of steam.	User	a. For contamination that prevents seating the valve. With pressure in the jacket, lift the valve lever briefly all the way up, to blow the valve clean then let it snap back down to seat the valve.
	Auth Service Rep Only	b. Safety valve for defects. Defective valve MUST be replaced with an identical valve. X
Safety valve leaks a large amount of steam.	Auth Service Rep Only	a. Steam supply pressure. X b. Safety valve for defects. Defective valve MUST be replaced with an identical valve. X
Pipe fitting leaks	User	a. Is the fitting tight?
	Auth Service Rep Only	b. If the leak is at a trunnion, and tightening the packing gland does not stop the leak, replace the packing. X
Kettle is hard to tilt (TD/2 only)	Auth Service Rep Only	a. Tilting mechanism for the presence of any contamination and for proper alignment and lubrication. X

WARNING

TO AVOID INJURY FROM SPLASHING OR SPILLING HOT CONTENTS, EMPTY THE KETTLE THROUGH THE DRAW-OFF OR BY BAILING BEFORE ANY WORK IS DONE ON THE TILTING MECHANISM.

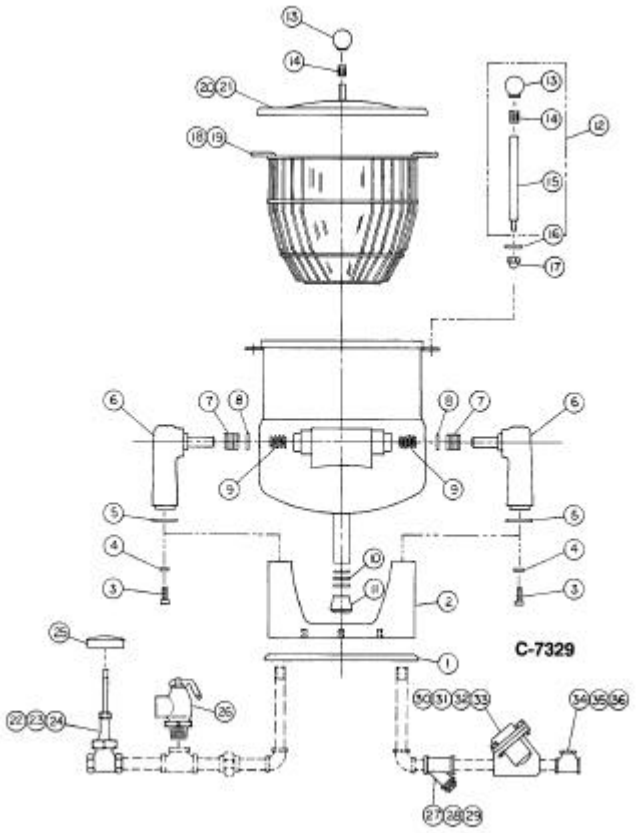
Parts List
Model TDC/3



Key	Description	Part No.
1	Pedestal Assembly	081572
2	Pedestal Cap	081574
3	Nut, Hex Jam 1-3/4" OD	081707
7	Packing Ring Set	002033
8	Washer Packing	002019
9	Spring	002025
10	Washer 5/8" Neoprene	003242
11	Tip, Crutch 1" ID	002032
12	Handle Assembly	012694
13	Knob, Maroon Ball	012691
14	Ring, Tolerance	012692
15	Handle Shaft	018963
16	Lockwasher 3/8"	005618
17	Nut Cap 3/8-24	003188
18	Basket TDC/3-10	001110
19	Basket TDC/3-20	001120
20	Cover Assembly TDC/3-10	001107
21	Cover Assembly TDC/3-20	001108
22	Valve, Globe 3/8" Brass*	002051
23	Valve, Globe 3/8" RCP*	010145

Key	Description	Part No.
24	Valve, Globe 3/8" PCP*	010146
25	Handwheel, Valve	01148
26	Valve, Safety (not incl.)	011001
27	Strainer, 1/2" Y, Blk.	004181
28	Strainer, 1/2" Y, RCP	010165
29	Strainer, 1/2" Y, PCP	010166
30	Steam Trap Repair Kit	002886
31	Steam Trap, 1/2" Blk	010250
32	Steam Trap, 1/2" RCP	010251
33	Steam Trap, 1/2" PCP	010252
34	Valve, Check 1/2" Brass	004187
35	Valve, Check 1/2" RCP	010124
36	Valve, Check 1/2" PCP	010140
37	Nipple, 3/8" x 12-1/2" Lg	005485
—	Pedestal Gasket (old style)	001968
—	Bullet Foot	042505
—	Stem Extension PCP	012722
—	Kettle Body	MS2043
—	Control, DC Adjustable	013972
—	Control, DC Adjustable	005125

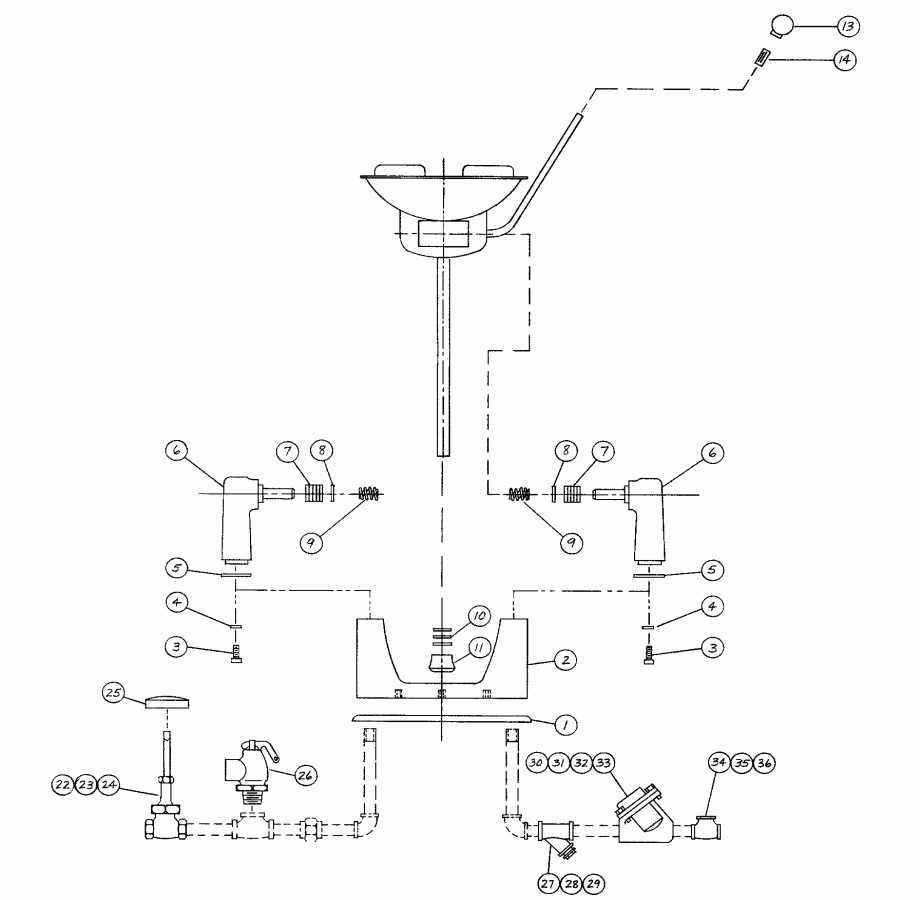
Parts List
Model TDC/2



Key	Description	Part No.	Key	Description	Part No.
1	Base Gasket	001710	19	Basket TDC/2-20	001120
2	Base Pedestal	005901	20	Cover Assembly TDC/2-10	001107
3	Screw Socket HD 1/4-20 x 3/4"	009969	21	Cover Assembly TDC/3-20	001108
4	Lockwasher 1/4"	005692	22	Valve, Globe 3/8" Brass*	002051
5	Gasket Pedestal Cap 1/4"	001968	23	Valve, Globe 3/8" RCP*	010145
6	Cap Pedestal	005902	24	Valve, Globe 3/8" PCP*	010146
7	Packing Ring Set	002033	25	Handwheel, Valve	001148
8	Washer Packing	002019	26	Valve, Safety (not incl.)	011001
9	Spring	002025	27	Strainer, 1/2" Y, Blk.	004181
10	Washer 3/8" Levelling	003242	28	Strainer, 1/2" Y, RCP	010165
11	Tip, Crutch 1" ID	002032	29	Strainer, 1/2" Y, PCP	010166
12	Handle Assembly (pre 1/76) Handle Assembly (post 1/76)	012695 012694	30	Steam Trap Repair Kit	002886
13	Knob, Maroon Ball	012691	31	Steam Trap, 1/2" Blk	010250
14	Ring, Tolerance	012692	32	Steam Trap, 1/2" RCP	010251
15	Handle Shaft	018963	33	Steam Trap, 1/2" PCP	010252
16	Lockwasher 3/8"	005618	34	Valve, Check 1/2" Brass	004187
17	Nut Cap 3/8-24	003188	35	Valve, Check 1/2" RCP	010124
18	Basket TDC/3-10	001110	36	Valve, Check 1/2" PCP	010140

NOTE: Items 1,5,7,8 and 9 are needed to change packing

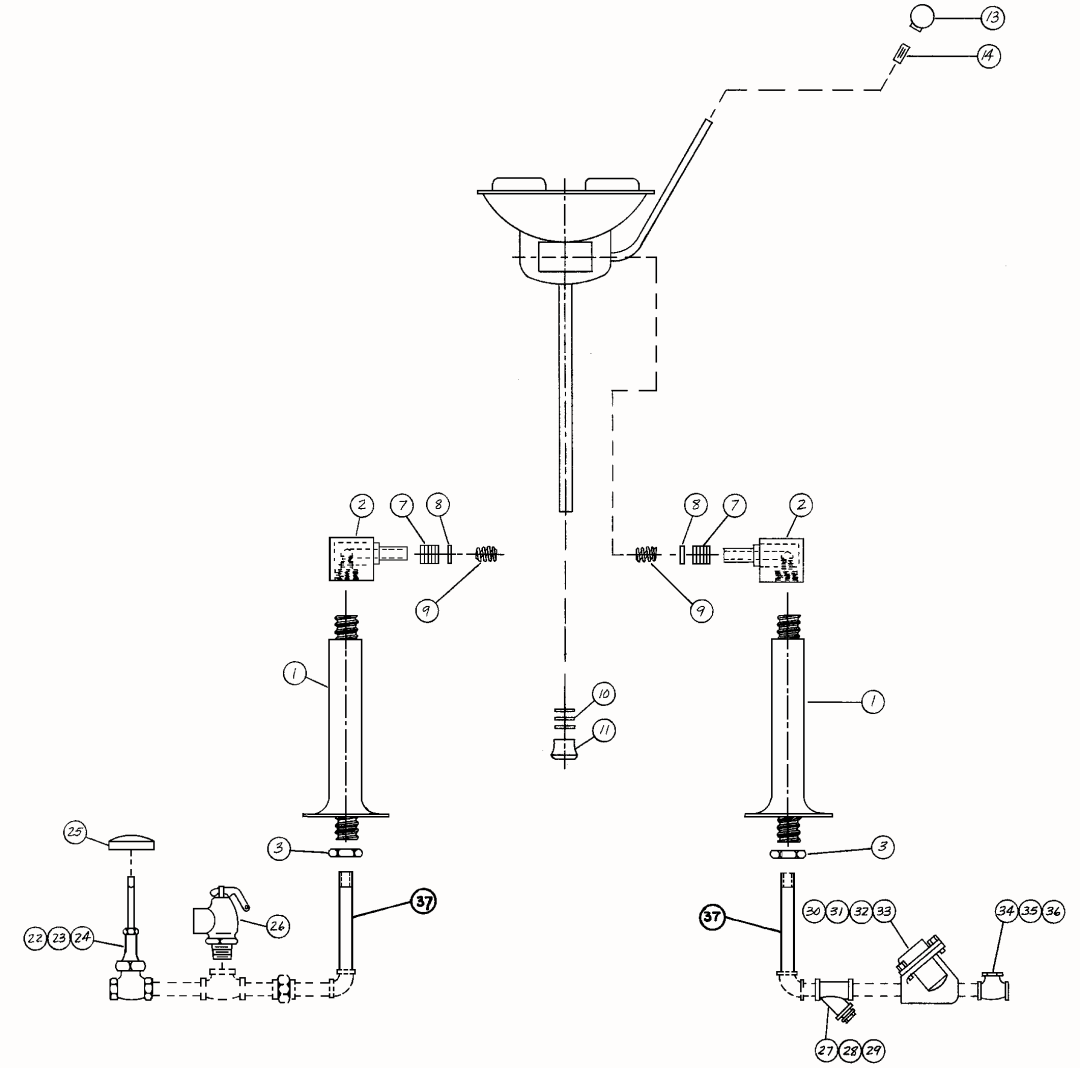
Parts List
Model TDO



Key	Description	Part No.
1	Base Gasket	001710
2	Base Pedestal	005901
3	Screw Socket HD Cap ¼-20x¾"	009969
4	Lockwasher 1/4"	005692
5	Gasket Pedestal Cap	001968
6	Cap Pedestal	005902
7	Packing Ring Set	002033
8	Washer Packing	002019
9	Spring	002025
10	Washer 5/8" Plain	007273
11	Bumper, TDO	010888
13	Knob, Maroon Ball	012691
14	Ring, Tolerance	012692
22	Valve, Globe 3/8" Brass*	002051

Key	Description	Part No.
23	Valve, Globe 3/8" RCP*	010145
24	Valve, Globe 3/8" PCP*	010146
25	Handwheel, Valve	001148
26	Valve, Safety (not incl.)	011001
27	Strainer, 1/2" Y, Blk.	004181
28	Strainer, 1/2" Y, RCP	010165
29	Strainer, 1/2" Y, PCP	010166
30	Steam Trap Repair Kit	002886
31	Steam Trap, 1/2" Blk	010250
32	Steam Trap, 1/2" RCP	010251
33	Steam Trap, 1/2" PCP	010252
34	Valve, Check 1/2" Brass	004187
35	Valve, Check 1/2" RCP	010124
36	Valve, Check 1/2" PCP	010140

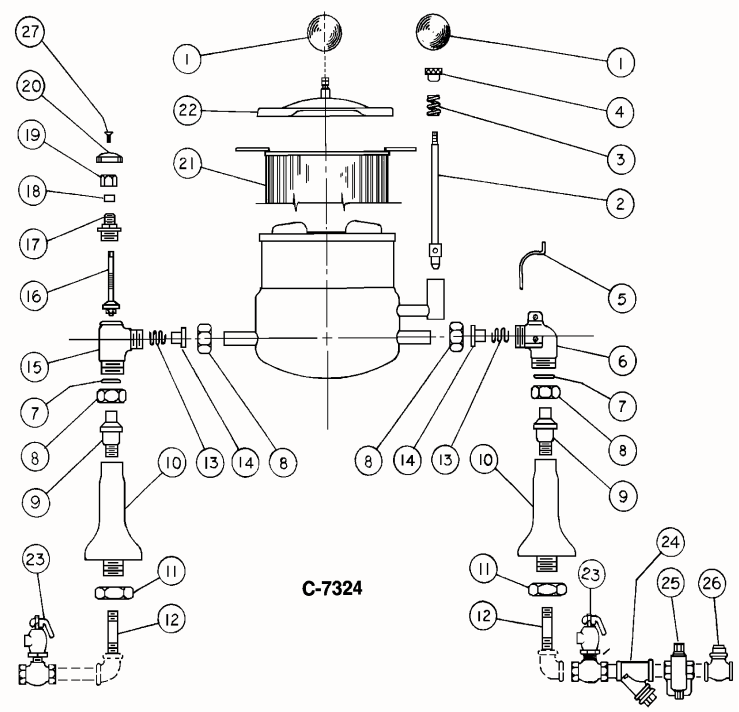
Parts List
Model TDO/1



Key	Description	Part No.
1	Pedestal Assembly	081572
2	Pedestal Cap	081574
3	Nut, Hex Jam 1-3/4" OD	081707
7	Packing Ring Set	002033
8	Washer Packing	002019
9	Spring	002025
10	Washer 5/8" Plain	003242
11	Bumper, TDO	010888
13	Knob, Maroon Ball	012691
14	Ring, Tolerance	012692
22	Valve, Globe 3/8" Brass*	002051
23	Valve, Globe 3/8" RCP	010145
24	Valve, Globe 3/8" PCP	010146

Key	Description	Part No.
25	Handwheel, Valve	001148
26	Valve, Safety (not incl.)	011001
27	Strainer, 1/2" Y, Blk.	004181
28	Strainer, 1/2" Y, RCP	010165
29	Strainer, 1/2" Y, PCP	010166
30	Steam Trap Repair Kit	002886
31	Steam Trap, 1/2" Blk	010250
32	Steam Trap, 1/2" RCP	010251
33	Steam Trap, 1/2" PCP	010252
34	Valve, Check 1/2" Brass	004187
35	Valve, Check 1/2" RCP	010124
36	Valve, Check 1/2" PCP	010140
37	Nipple ⅜" x 12-1/2" Lg.	005485

Parts List
Model TDA

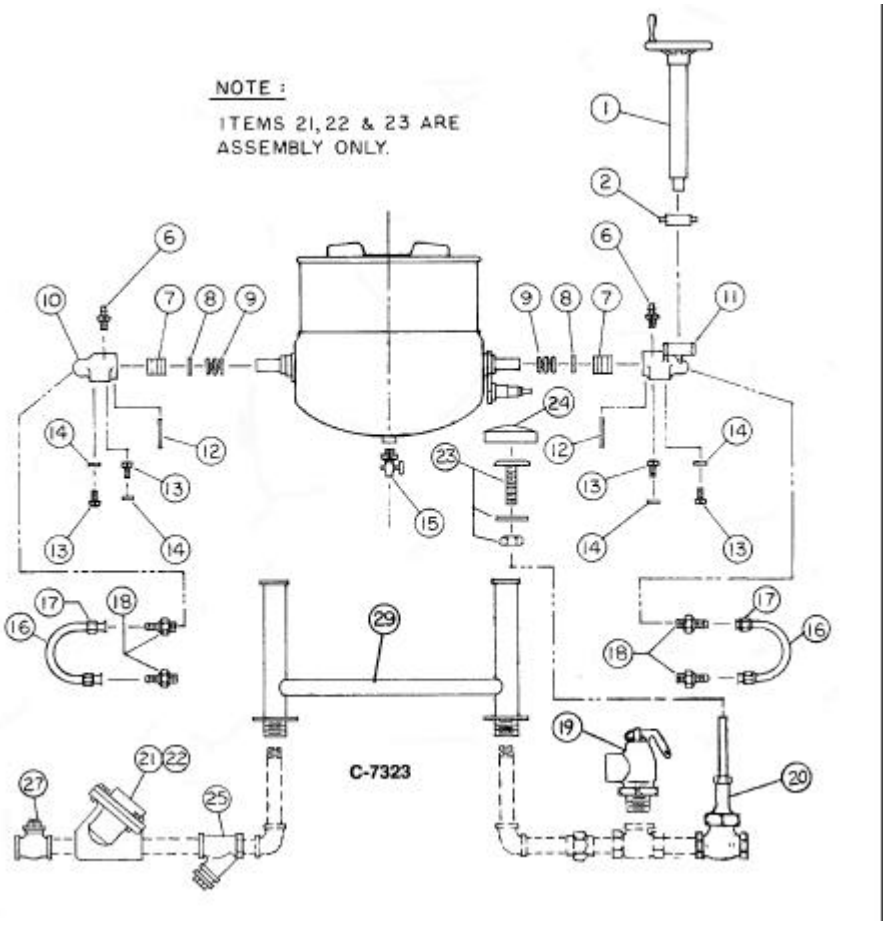


Key	Description	Part No.
1	Knob	001385
2	Handle & Bushing Assy.	001022
3	Spring	001067
4	Handle Guide Nut	001025
5	Plunger Guide	001046
6	Elbow Assembly (Incl item 5) see 6a	001083
6a	Elbow Assembly -1, 4, & 6 Qt pre 1957	001043
7	O-Ring	007360
8	Hex Nut (See 8a)	001032
8a	Hex Nut 1, 4, & 6 Qt pre 1957	001034
9	Ferrule	001023
10	Pedestal (to 20 Qts incl)	001087
10a	Pedestal (40 Qt size only)	001088
11	Hex. Mounting Nut	001031
12	Pipe (for 1087 Pedestal)	001056
12a	Pipe (for 1088 Pedestal)	001057
13	Packing	001065
14	Packing Gland (see 14a)	001036
14a	Packing Gland -1,4,6 sizes pre-1957	001045
15	Valve Assembly (Incl 16, 17, 18, 19 and 20 see 15a	001037

Key	Description	Part No.
15a	Valve Assy -1, 4, & 6 Qt pre 1957*	001042
16	Stem Assembly*	001098
16a	Stem Assy -1, 4, & 6 Qt pre-1957*	002076
17	Bonnet, see 17a	001142
17a	Bonnet -1, 4, & 6 Qt Pre-1957*	001075
18	Packing Ring	001152
19	Packing Nut	001144
20	Handle (Small 2" dia)	001148
21	Basket TDA 10	001110
21a	Basket TDA 20	001120
22	Cover TDA 10	001107
22a	Cover TDA 20	001108
23	Safety Valve (state pressure)	—
24	1/2" Strainer	004181
25	1/2" Steam Trap	004182
26	1/2" Swing Check Valve	004187
27	Handle Screw	002613
28	Valve Stem Assembly (includes 16, 17, 18, 19, 20 & 27)	002615

*Obsolete - see item 28

Parts List
Model TD/2-40

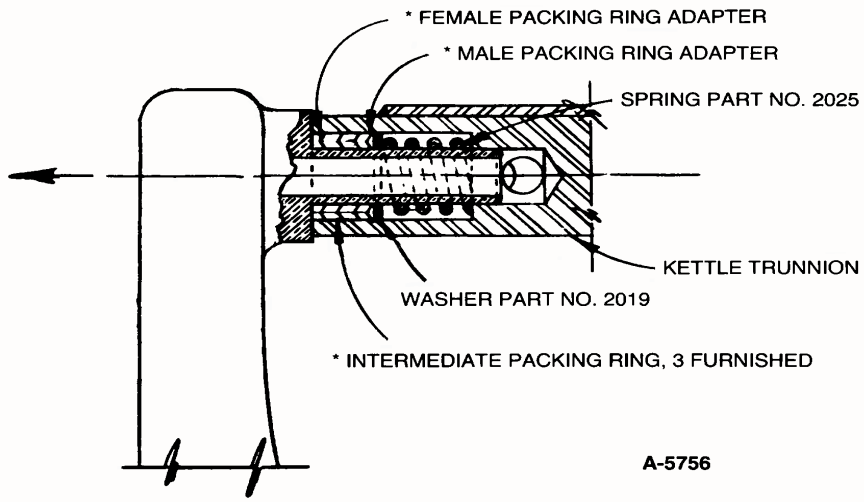


Key	Description	Part No.
1	Mechanical Acuator Assy	013943
2	Pivot	001275
3	Not Used	—
4	Not Used	—
5	Not Used	—
6	Alemite Grease Fitting (st.)	012100
7	Packing (4 rings)	001276
8	Packing Washer	001273
9	Trunnion Spring	012403
10	LH Trunnion Casting	001265
11	RH Trunnion Casting	001266
12	1/8" R. x 2-3/4" Lg. Brass Pin	001907
13	5/16"-18 x 3/4" Hex Cap Screw	006014
14	5/16" Lockwasher	005656
15	1/2" Jacket Drain Petcock	012070

Key	Description	Part No.
16	5/8" OD Tube Assembly	010358
17	5/8" Flare Nut (part of item 16)	010359
18	Half Union Coupling 3/4" MPT x 5/8"	010073
19	3/4" Safety Valve (45 PSI)	011001
20	1/2" Globe Valve w/Handle	010034
21	1/2" Thermo Steam Trap (black)	010250
22	Steam Trap Repair Kit	002886
23	Valve Stem Sleeve Assembly	010721
24	Handle (Part of item 20)	—
25	1/2" Strainer (black)	004181
26	Not Used	—
27	1/2" Swing Check Valve (Std.)	004187
28	Calcium Complex No. 2 Grease	093703
29	Stand Assembly	009913

Diagram
Trunnion Packings

Model TDC/2



PEDESTAL — (REMOVE 4 BOLTS IN BASE & BACK OUT IN DIRECTION SHOWN)

*** NOTE!**
THESE 5 RINGS COMPRISE ONE SET OF PACKING & **MUST** BE ASSEMBLED IN THE MANNER SHOWN. PART NO. 2033

Service Log

Model No. _____ Purchased From _____

Serial No. _____ Location _____

Date Purchased _____ Date Installed _____

Purchase Order No. _____ For Service Call _____

Date	Maintenance Performed	Performed by

Limited Warranty
To Commercial Purchasers *

(Domestic U.S., Hawaii &
Canadian Sales Only)

Groen Foodservice Equipment ("Groen Equipment") has been skillfully manufactured, carefully inspected and packaged to meet rigid standards of excellence. Groen warrants its Equipment to be free from defects in material and workmanship for (12) twelve months with the following conditions and subject to the following limitations.

I. This parts and labor warranty is limited to Groen Equipment sold to the original commercial purchaser/users (but not original equipment manufacturers), at its original place of installation in the continental United States, Hawaii and Canada.

II. Damage during shipment is to be reported to the carrier, is not covered under this warranty, and is the sole responsibility of purchaser/user.

III. Groen, or an authorized service representative, will repair or replace, at Groen's sole election, any Groen Equipment, including but not limited to, drawoff valves, safety valves, gas and electric components, found to be defective during the warranty period. As to warranty service in the territory described above, Groen will absorb labor and portal to portal transportation costs (time & mileage) for the first twelve (12) months from date of installation or fifteen (15) months from date of shipment from Groen.

IV. This warranty does not cover boiler maintenance, calibration, periodic adjustments as specified in operating instructions or manuals, and consumable parts such as scraper blades, gaskets, packing, etc., or labor costs incurred for removal of adjacent equipment or objects to gain access to Groen Equipment. This warranty does not cover defects caused by improper installation, abuse, careless operation, or improper maintenance of equipment. This warranty does not cover damage caused by poor water quality or improper boiler maintenance.

V. THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, EACH OF WHICH IS HEREBY EXPRESSLY DISCLAIMED. THE REMEDIES DESCRIBED ABOVE ARE EXCLUSIVE AND IN NO EVENT SHALL GROEN BE LIABLE FOR SPECIAL, CONSEQUENTIAL OR INCIDENTAL DAMAGES FOR THE BREACH OR DELAY IN PERFORMANCE OF THIS WARRANTY.

VI. Groen Equipment is for commercial use only. If sold as a component of another (O.E.M.) manufacturer's equipment, or if used as a consumer product, such Equipment is sold AS IS and without any warranty.

* (Covers All Foodservice Equipment Ordered After October 1, 1995)

1055 Mendell Davis Drive
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Telephone 601 372-3903
FAX 601 373-9587

OM-TD (Revised 2/98)
Part Number 121006